

RUSS, AUGUST & KABAT

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**UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA – WESTERN DIVISION**

NEUROGRAFIX, a California
corporation; WASHINGTON
RESEARCH FOUNDATION, a not-for-
profit Washington corporation,

Plaintiffs,

vs.

SIEMENS MEDICAL SOLUTIONS
USA, INC., a Delaware corporation; and
SIEMENS AKTIENGESELLSCHAFT, a
German Corporation,

Defendants.

Case No. 10-CV-1990 MRP (RZx)

[Assigned to The Honorable Mariana
R. Pfaelzer]

**DECLARATION OF MICHAEL N.
BRANT-ZAWADZKI, M.D.,
F.A.C.R. IN SUPPORT OF
NEUROGRAFIX'S OPPOSITION
TO SIEMENS' MOTION FOR
PARTIAL SUMMARY
JUDGMENT OF INVALIDITY
REGARDING CLAIMS 3-5, 36, 37,
39-44, 46, 47, 49, 50, 55, 56, 58, 59,
61, AND 62 IN U.S. PATENT NO.
5,560,360 IN LIGHT OF CLAIM
CONSTRUCTION ORDER**

First Amended Complaint Filed:
July 30, 2010

1 I, Michael N. Brant-Zawadzki, declare and state as follows:

2 1. I have been practicing medicine as a diagnostic radiologist for 35 years.

3 2. I am currently the Executive Medical Directory of the Neurosciences
4 Institute at Hoag Memorial Hospital in Newport Beach, CA.

5 3. I have been board certified in Radiology since 1979 and Neuroradiology
6 since 1995 (the first year board certification for Neuroradiology was offered).

7 4. I attended medical school at the University of Cincinnati College of
8 Medicine, where I graduated first in my class and was awarded the Stella F.
9 Hoffheimer Award. After an internship in internal medicine at UC San Diego, I
10 completed my residency in Diagnostic Radiology at Stanford University Medical
11 Center. I also completed a 1-year fellowship in Neuroradiology at Stanford
12 University Medical Center.

13 5. After my fellowship, in 1980, I obtained a full time academic post as an
14 Assistant Professor at UC San Francisco. During my first three years at UC San
15 Francisco, I became involved with the Department of Radiology's imaging
16 laboratory, where one of the first commercialized MRI instruments was being
17 designed and developed. I became the neuroradiologist in charge of the
18 development of clinical magnetic resonance imaging applications for the brain
19 and the spinal region. I co-directed the MRI animal research laboratory at UC
20 San Francisco's main academic hospital during this period as well. Our
21 department generated a large number of original research articles, book chapters
22 and books.

23 6. I have authored or co-authored over 180 peer reviewed articles in the
24 medical literature, including some of the fundamental articles regarding MRI
25 imaging of the central nervous system. I also wrote the first textbook on MRI
26 imaging of the central nervous system ever published, and was a contributor to a
27

1 large number of chapters and non-peer reviewed articles. I have also lectured
2 throughout the world on the topic of MRI imaging of the central nervous system.

3 7. In recognition of my works, I was also awarded the Gold Medal from the
4 Society of Magnetic Resonance in Medicine for my outstanding pioneering
5 achievements in magnetic resonance imaging.

6 8. Claim element 3(d)[iii] of U.S. Patent No. 5,560,360 (the "'360 patent")
7 requires that "[the] characteristic spin-spin relaxation coefficient [of the nerve] is
8 **substantially longer** than that of other surrounding tissue." '360 patent at 37:54-
9 56 (emphasis added). A person of ordinary skill in the art understands that the
10 "characteristic spin-spin relationship coefficient" of a tissue refers to the T2 decay
11 time of the tissue. This claim language, therefore, reflects that the nerve must
12 have a T2 decay time that is substantially longer than the tissue around it.
13 Each structure shown on an MR image has its own characteristic T2 decay time.
14 Although a structure's T2 decay time varies depending on the field strength, the T2
15 decay time is measurable for a given field strength. Attached hereto as Exhibit A
16 is a true and correct copy of an article I coauthored entitled "Reproducibility of
17 Relaxation Times and Spin Density Calculation from Routine MR Imaging
18 Sequences: Clinical Study of the CNS," which lists the T2 decay times for various
19 tissues at a field strength of 0.35 Tesla. The article was published in the American
20 Journal of Neuroradiology in 1985.

21 9. For purpose of this declaration, I assume that the structure in Figure 5 of
22 Hajnal et al., MR Imaging of Anisotropically Restricted Diffusion of Water in the
23 Nervous System: Technical, Anatomic, and Pathologic Considerations in *Journal*
24 *of Computer Assisted Tomography* 15(1):1-18 (Jan./Feb. 1991) ("Hajnal
25 reference") is the trigeminal nerve, as represented by Hajnal et al. In Figure 5, the
26 portion of the trigeminal nerve shown is located inside the skull and is therefore
27 surrounded by cerebral spinal fluid ("CSF").

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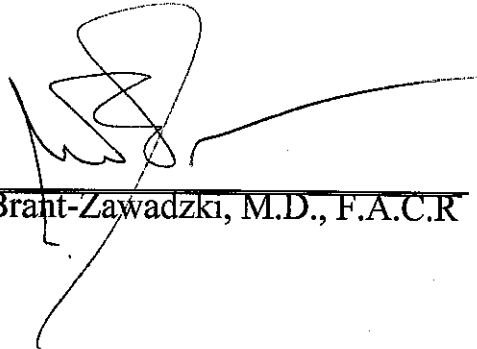
10. The characteristic T2 decay time of the trigeminal nerve is not substantially longer than that of surrounding tissue regardless of the magnetic field strength, as required by claim element 3(d)[iii] of the '360 patent. For example, at a field strength of 0.35 tesla, the T2 decay time for the surrounding cerebral spinal fluid is 166.3 ms. At the same field strength, the T2 decay time of the trigeminal nerve is similar to – not substantially longer than – surrounding white and grey brain matter, which ranges from 56.8 ms to 59.8 ms. The only reason the surrounding CSF appears black, and the nerve appears brighter, in Figure 5 is because Hajnal et al. used diffusion weighted sequences, which make essentially pure water collections like spinal fluid look black (diffusion weighted sequences are designed to show increased signal from tissue where microscopic water motion is restricted by membranes or other boundaries).

11. Therefore, in my opinion, Figure 5 of the Hajnal reference does not meet the limitations of element 3(d)[iii] of the '360 patent.

I declare under penalty of perjury that the statements in this declaration are true and correct.

Signed on August 8, 2011 in Newport Beach, California.

By:


Michael N. Brant-Zawadzki, M.D., F.A.C.R.